

## Clustering Balkan Countries Based on Competitiveness Factors: A Strategic Perspective

**Kazım DEVELİOĞLU**

Akdeniz University, Alanya Business Faculty  
Alanya, Turkey  
[kdevelioglu@akdeniz.edu.tr](mailto:kdevelioglu@akdeniz.edu.tr)

**Kemal KANTARCI**

Akdeniz University, Alanya Business Faculty  
Alanya, Turkey  
[kantarci@akdeniz.edu.tr](mailto:kantarci@akdeniz.edu.tr)

**Abstract:** *Prior to directing their investments, strategy makers at national and firm level need to know competitive advantages and disadvantages in a country or region. By bearing this need in mind, this study aims to examine competitive factors in Balkan countries to develop a road map for investors. To do this, we used World Economic Forum's "Global Competitiveness Index" to analyze the case of Balkan countries as a region to cluster and compare them based on Global competitiveness factors. Analysis results pointed out those Balkan countries were clustered in two groups and scored lower or medium level on almost all competitive factors as the region. Based on these findings, authors suggested various strategic recommendations at micro and macro level.*

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## Literature review

In an era of great competition among nations and firms, it is vital for firms' strategy makers to develop strategies to adapt to environmental changes and speed their processes. Vietor (2006) indicates that, in national level, as a result of globalization, countries compete each other in terms of markets, technology, skills, and investment to grow and raise their standards of living. Although, macroeconomic competitiveness creates the potential for high productivity, it is not sufficient. Productivity ultimately depends on improving the micro economic capability of the economy and sophistication of local competition (Porter, 2009).

Economic Forum (2011) defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time.

“Competitive strategy is the search for a favorable competitive position in an industry, the fundamental arena in which competition occurs. Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition” (Porter, 2004, p1). According to Porter (2003) competitive success cannot solely depend on managerial and company attributes when many successful firms in a given field are concentrated in just a few locations (pp. 254). Therefore, we need to see location and cluster membership as integral part of a company's success.

A cluster is “a geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types” (Porter, 2003b, p562). Becoming in a cluster offers a firm certain advantages such as knowledge, skills, inputs, components, services, etc. A cluster, geographically, “can range from a single city or state to a country or even a group of neighboring countries” (Enright, 1993; in Porter, 2003a, pp. 254). Regional cooperative formations (e.g., NAFTA, APEC) aimed to develop trade and investment in a particular region. It is expected that cooperation among neighbors can significantly have an impact on productivity of national business environment (Porter, 1998).

To be competitive, nations are struggling to remain competitive by having regional specializations in terms of higher value added – non manufacturing industries and Research & Development intensive manufacturing niches (OECD, 2007). Similarly, Porter (2009) indicates that competitiveness depends on the productivity with which a nation uses its human, capital, and natural resources. Economic coordination among neighboring countries can significantly enhance competitiveness. By the similar vein, as developing countries, economic collaboration among Balkan countries is expected to enhance sustainable competition. At this point, it has to be noted that competition policies of advanced countries might not be appropriate for the stage of development of most developing countries (Singh, 1999). Singh (1999) also indicates that “It is important for developing countries to have a competition policy which is designed to take appropriate account of their level of development and the long term objective of sustained economic growth. This is in part due to the potential effects of the international merger movement and also because of privatization, deregulation and liberalization which have occurred in the domestic economies of most developing countries” (p1).

As a developing region, the Balkan peninsula is becoming recovered and develop after post-socialist and instable period because of the war among some of states. “The Balkan Peninsula is an important area, having witnessed important historical and political experiences and incidents for ages” (Çelebioğlu 2011, p.112). Having a population of, nearly, 140 million citizens, the Balkan region provides a promising market for firms from international arena and especially Balkan countries. As it is indicated in WEF’s (2011-2012) Global Competitiveness Report, “national competitiveness, we note that despite much work in the area of sustainability, there is not yet a well-established body of literature on the link between productivity (which is at the heart of competitiveness) and sustainability. However, at the World Economic Forum we believe that the relationship between competitiveness and sustainability is crucial (pp. 52). Developing economically sound strategies, especially for international firms and firms from the region, it is crucial to examine competitiveness indicators of Balkan countries. This will help firms to develop a sustainable competitive edge by investing and selling in the region. Taking this necessity into account, this study aims to fill the gap for lack of comparative studies for Balkan countries. More specifically, we analyze Balkan countries’ competitiveness factors by, first, clustering them and, second, compare the clusters to grasp which cluster perform in which competitive factor well.

In this study, we used the data of The World Economic Forum's (WEF) classification of "Global Competitiveness Index" factors to examine indicators that are expected to influence sustainable competition in the region. for the years between 2008-2011. WEF's classification consists of three sub-indexes and 12 factors that measure these sub-indexes, which are reported below:

- **Basic requirements**

(Institutions, Infrastructure, Macroeconomic environment, and Health and primary education)

- **Efficiency enhancers**

(Higher education and training, Goods market efficiency, Labor market efficiency, financial market development, Technological readiness, and Market size)

- **Innovation and sophistication factors**

(Business sophistication and Innovation)

## **Methodology**

As it is mentioned above, in this study, we used the data of The World Economic Forum's (WEF) "Global Competitiveness Index" for the years between 2008-2011. By using the secondary data, we aimed, first, to cluster the Balkan countries in terms of above mentioned "Global Competitiveness Index" factors and second to compare these clusters to reveal which of them are more competitive in sub-

indexes and factors. To classify Balkan Countries, we employed a k-means cluster analysis to see "how objects should be assigned to groups so that there will be as much similarity within and difference among groups as possible" (Churchill, 1998, pp. 860). In comparing Balkan countries based on competitiveness index actors, t-test analysis was used aiming that whether the means of two clustered countries were statistically different from each other.

## Findings

In order to cluster the Balkan countries in terms of Global competitiveness factors, we employed a k-means cluster analysis and derived two clusters, which is reported in Table 1 below. One of these clusters (Cluster 1) includes countries: Bulgaria, Croatia, Greece, Romania, Serbia, and Turkey. The second cluster (Cluster 2) countries are Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Slovenia. Scores in Table 1 betray that only in market size competitiveness factor, Cluster 1 countries have a competitive advantage compared with Cluster 2 countries.

Table 1. Cluster Analysis Results

Global Competitiveness Factor	Cluster		F	p
	1	2		
Institutions	3,63	4,35	1,784	0,214
Infrastructure	4,00	3,38	0,401	0,542
Macroeconomic environment	4,70	4,93	1,827	0,209
Health and primary education	5,45	5,90	0,033	0,860
Higher education and training	3,95	4,38	0,022	0,885
Goods market efficiency	4,33	4,35	0,396	0,545
Labor market efficiency	3,60	4,58	3,599	0,090
Financial market development	4,18	4,83	0,021	0,889
Technological readiness	3,78	4,05	0,105	0,754
Market size	5,20	2,05	15,499	0,003
Business sophistication	4,20	3,80	0,018	0,897
Innovation	3,13	3,30	0,120	0,737

In order to compare Cluster 1 and Cluster 2 countries, we used t-test analysis and obtained the results, which are reported in Table 2 and Table 3. In table 2, we compared two clusters in terms of Global Competitiveness sub-indexes.

Table 2. T-test Results for Cluster Membership and Global Competitiveness Sub-indexes

Variable	Cluster	Std.		t	p
		Mean	Deviation		
Basic requirements	1	4,38	0,246	-0,858	0,396
	2	4,47	0,449		
Efficiency enhancers	1	4,06	0,161	2,547	0,015
	2	3,87	0,326		
Innovation and sophistication factors	1	3,39	0,214	0,479	0,634
	2	3,34	0,473		

Results in Table 2 portray that Cluster 1 (Mean= 4,06) and Cluster (Mean= 3,87) countries both had medium-level but statistically significant difference ( $t= 2,547$ ;  $P= 0,015$ ) in efficiency enhancers sub-index. For the other two sub-indexes, namely basic requirements ( $t= 0,858$ ;  $P= 0,396$ ) and innovation and sophistication factors ( $t= 0,479$ ;  $P= 0,634$ ), both of the clusters showed no statistically significant results. It has to be noted that in both, basic requirements and innovation and sophistication factors, Cluster 1 and Cluster 2 countries had medium level competitiveness scores.

Table 3. T-test Results for Cluster Membership and Global Competitiveness Factors

Variable	Cluster	Mean	Std. Deviation	t	p
Institutions	1	3,53	0,233	-2,657	0,011
	2	3,84	0,515		
Infrastructure	1	3,70	0,691	1,158	0,254
	2	3,43	0,851		
Macroeconomic environment	1	4,55	0,482	-2,406	0,021
	2	4,89	0,435		
Health and primary education	1	5,73	0,228	-0,332	0,741
	2	5,76	0,319		
Higher education and training	1	4,21	0,254	0,305	0,762
	2	4,17	0,625		
Goods market efficiency	1	4,00	0,239	-1,194	0,239
	2	4,12	0,376		
Labor market efficiency	1	4,04	0,325	-3,592	0,001
	2	4,34	0,208		
Financial market development	1	4,04	0,224	-0,255	0,800
	2	4,07	0,504		
Technological readiness	1	3,82	0,286	0,597	0,554
	2	3,74	0,616		
Market size	1	4,20	0,579	8,427	0,000
	2	2,83	0,479		
Business sophistication	1	3,75	0,313	0,268	0,790
	2	3,72	0,427		
Innovation	1	3,45	0,131	0,705	0,485
	2	2,97	0,507		

Examination of Table 3 revealed mixed results for Cluster 1 and Cluster 2 countries. In Table 3, the results betray that Cluster 2 countries scored better in three of twelve Global Competitiveness factors than Cluster 1 countries. Only for market size competitiveness factor, Cluster 1 countries had statistically significant difference scores ( $t= 8,427$ ;  $P= 0,000$ ).

## Discussion

Analysis results at the findings section pointed out those competitiveness scores of Balkan countries, whether it belong Cluster 1 or Cluster 2, are relatively low or medium and need to be developed. Specifically, Cluster 2 countries (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Slovenia) should have a national strategic plan to improve their competitive position in infrastructure (quality of roads, railroads, ports, and air transport infrastructure), higher education and training (secondary education enrollment, tertiary education enrollment, quality of the educational system, math & science education, management schools, internet access in schools, availability of research and services), goods market efficiency (intensity of local competition, extent of market dominance, effectiveness of anti-monopoly policy, extent and effect of taxation, total tax rate, number of procedures to start a business, agricultural policy cost, buyer sophistication), labor market efficiency (cooperation in labor-employer relations, flexibility of wage determination, hiring and firing practices, women in labor force), financial market development (availability of financial services, affordability of financial services, ease of access to loans, venture capital availability), technological readiness (availability of latest technologies, firm-level technology absorption, FDI and technology transfer, internet related factors), business sophistication (local supplier quantity and quality, state of cluster development, nature of competitive advantage, control of international distribution, extent of marketing, willingness to delegate authority), and innovation (capacity for innovation, quality of scientific research institutions, company spending on R&D, utility patents granted).

Similarly, Cluster 1 countries should emphasize on development of institutions, infrastructure, financial market, and technological environment and better conditions in macroeconomic environment, higher education and training, goods market efficiency, business sophistication, and innovation. It seems from analysis results that the major advantage for these clusters is their population and market size. This picture warns us that firms plan to invest in the Balkan region should be aware of disadvantageous competitive factors in both cluster countries. It seems that even though both clusters have disadvantages for investors they also offer certain advantages for them. We believe that for strategy makers in national governments and firms, these findings provide useful insights to develop their strategic plans.

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